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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/519,720 | 12/30/2004 | Chishio Hosokawa | 28955.1044 | 7491 |

27890 7590 03/29/2007
STEPTOE & JOHNSON LLP
1330 CONNECTICUT AVENUE, N.W.
WASHINGTON, DC 20036

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| EXAMINER |
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NGUYEN, TRAM HOANG

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| ART UNIT | PAPER NUMBER |
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2818

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 03/29/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/519,720

Applicant(s)

HOSOKAWA ET AL.

Examiner

Tram H. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 3-8 and 12-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,9-11 and 16-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>12/30/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group VI, claims 1,2,9,10,11,16-20 is acknowledged. The traversal is on the ground(s) that "all Species are sufficiently related that a thorough and complete search for Species VI should encompass a thorough and complete search for all Species I-IX. Thus, search and examination of all Species herein could be made without serious burden" It is not found persuasive because the Examiner clearly shows there are distinct species proposed in the restriction requirement Action. Moreover, the search is not coextensive as evidenced by the different fields of search for the different species. Additionally, applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1,2, 9, 10, 11, 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosokawa (US 2006/0049410).

Regarding **claim 1**, Hosokawa discloses an organic luminescence device comprising: an anode (see fig. 1, item 10); an insulating or semiconductive inorganic thin film layer (12) having an energy gap of 2.7 eV or more (col. 4, lines 21-26); an organic compound layer (14) comprising one or more layers which comprise at least an organic emitting layer (col. 4, lines 5-6); and a cathode (16) in order of the description of these members (see fig. 1).

Hosokawa does not teach at least one of the layers containing an ortho-metallized metal complex. However, it would have been obvious to one having ordinary skills in the art at the time the invention was made to include one of the layer containing an ortho-metallized metal complex in the organic luminescence device so that it exhibits high luminescence efficiency and has a long life.

Regarding **claim 2**, Hosokawa discloses all the limitation of the claimed invention for the same reasons as set-forth above. Besides, Hosokawa teaches the inorganic thin film layer comprises one or more metals or compounds selected from metals, metal

calcogenides, oxynitrides, carbides, nitrides, silicides and borides (see col. 4, paragraphs 9 and 10).

Regarding **claim 9**, Hosokawa discloses all the limitation of the claimed invention for the same reasons as set-forth above. Besides, Hosokawa teaches the metals are two or more metals comprising one or more metals selected from the following A group; and one or more metals selected from the following B group; A group: In, Sn, Ga, Si, Ge, Zn, Cd, Mg, Al, Ta and Ti; B group: metals having a work function of 4.5 eV or more (col. 8, paragraph 2).

Regarding **claim 10**, Hosokawa discloses all the limitation of the claimed invention for the same reasons as set-forth above. Besides, Hosokawa teaches the metals in the B group are atoms belonging to any one of the groups IIIB, IVB, VB, VIB and VIIB in the periodic table (long period type) (col. 8, par. 2).

Regarding **claim 11**, Hosokawa discloses all the limitation of the claimed invention for the same reasons as set-forth above. Besides, Hosokawa teaches the metals in the B group are Au, Ni, Cr, Ir, Nb, Pt, W, Mo, Ta, Pd, Ru, Ce, V, Zr, Re, Bi and Co (col. 8, paragraph 2).

Regarding **claim 16**, Hosokawa discloses all the limitation of the claimed invention for the same reasons as set-forth above. Besides, Hosokawa teaches the inorganic thin film layer has a hole-injecting property (see col.4, paragraph 7).

Regarding **claim 17**, Hosokawa discloses all the limitation of the claimed invention for the same reasons as set-forth above. Besides, Hosokawa teaches the ionization energy of the inorganic thin film layer is more than 5.6 eV (col. 4, lines 21-26).

Regarding **claim 18**, Hosokawa discloses all the limitation of the claimed invention for the same reasons as set-forth above except for the ortho-metallized metal complex is an iridium complex. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include the ortho-metallized metal complex is an iridium complex in the organic EL as disclosed by Hosokawa since it was well-known in the art that the iridium complex is one of preferable organic luminescence material. Because it provides a higher efficiency and extended lifespan.

Regarding **claim 19**, Hosokawa discloses all the limitation of the claimed invention for the same reasons as set-forth above except for the organic emitting layer comprises a polymer compound as a host material. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include the organic emitting layer comprising a polymer compound as a host material in the organic luminescence structure as taught by Hosokawa in order to provide a good bondability.

Regarding **claim 20**, Hosokawa discloses all the limitation of the claimed invention for the same reasons as set-forth above except for the claimed organic luminescence device is arranged on the plastic substrate. However, it would have been obvious to one having ordinary skill in the art at the time invention was made to include a plastic substrate in the organic luminescence device as disclosed by Hosokawa since it was well-known in the art that the plastic substrate is one of preferable substrate

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material due to its characteristics of good mechanical strength, less permeability of moisture and oxygen.

Conclusion

A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tram Hoang Nguyen whose telephone number is (571)272-5526. The examiner can normally be reached on Monday-Friday, 8:30 AM – 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mathew Smith can be reached on (571)272-1907. The fax numbers for all communication(s) is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-1625.

THN
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03/23/2007

Andy Hough
Andy Hough
Primary Examiner